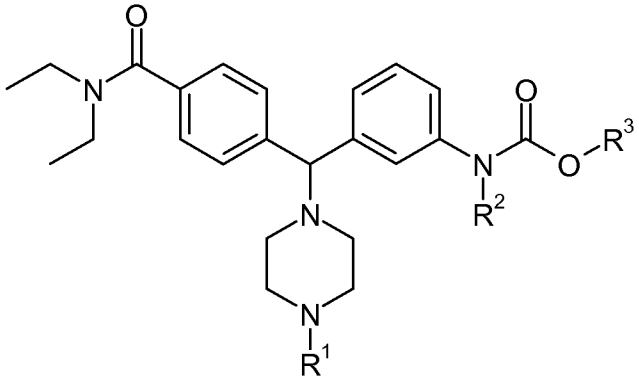
In the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Listings of claims

1. (original) A compound of formula I, a pharmaceutically acceptable salt thereof, diastereomers, enantiomers, or mixtures thereof:



I

wherein

R^1 is selected from C_{1-6}alkyl, C_{2-6}alkenyl, C_{3-6}cycloalkyl, and C_{3-6}cycloalkyl-C_{1-4}alkyl, wherein said C_{1-6}alkyl, C_{2-6}alkenyl, C_{3-6}cycloalkyl, and C_{3-6}cycloalkyl-C_{1-4}alkyl are optionally substituted with one or more groups selected from -R, $-NO_2$, -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, $-C(=O)NR_2$, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen, C_{3-6}cycloalkyl or C_{1-6}alkyl;

R^2 is selected from -H, C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, $-C(=O)NR_2$, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl; and

R^3 is selected from C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, $-C(=O)NR_2$, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl.

2. (original) A compound according to claim 1, wherein

R^1 is C_{1-6}alkyl, C_{3-6}cycloalkyl and C_{3-6}cycloalkyl-methyl, wherein said C_{1-6}alkyl, C_{3-6}cycloalkyl and C_{3-6}cycloalkyl-methyl are optionally substituted with one or more groups selected from C_{1-6}alkyl, $-CF_3$, C_{1-6}alkoxy, chloro, fluoro and bromo;

R^2 is selected from –H and C_{1-3}alkyl; and

R^3 is selected from C_{1-6}alkyl, and C_{3-6}cycloalkyl.

3. (original) A compound according to claim 2,

wherein R^1 is selected from C_{1-6}alkyl and C_{3-6}cycloalkyl-methyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl-methyl are optionally substituted with one or more groups selected from methoxy, ethoxy and isopropoxy;

R^2 is selected from –H; and

R^3 is selected from methyl, ethyl, propyl and isopropyl.

4. (original) A compound according to claim 1, wherein

R^1 is selected from n-propyl, cyclopropylmethyl, n-pentyl, 2-methoxyethyl, n-butyl, 2-isopropoxyethyl, 2-ethoxyethyl, 3-methoxypropyl, cyclobutylmethyl, methyl, and ethyl;

R^2 is selected from –H; and

R^3 is selected from methyl and ethyl.

5. (original) A compound according to claim 1, wherein the compound is selected from:
Compound 1: methyl 3-{(S)-{4-[(diethylamino)carbonyl]phenyl}[4-(2-methoxyethyl)piperazin-1-yl]methyl}phenylcarbamate;
Compound 2: methyl 3-((S)-(4-butylpiperazin-1-yl){4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 3: methyl 3-[(S)-{4-[(diethylamino)carbonyl]phenyl}(4-pentylpiperazin-1-yl)methyl]phenylcarbamate;
Compound 4: methyl 3-[(S)-{4-[(diethylamino)carbonyl]phenyl}(4-propylpiperazin-1-yl)methyl]phenylcarbamate;
Compound 5: methyl 3-((S)-[4-(cyclopropylmethyl)piperazin-1-yl]{4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 6: methyl 3-((S)-[4-(cyclobutylmethyl)piperazin-1-yl]{4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 7: methyl 3-{(R)-{4-[(diethylamino)carbonyl]phenyl}[4-(2-methoxyethyl)piperazin-1-yl]methyl}phenylcarbamate;
Compound 8: methyl 3-{(R)-{4-[(diethylamino)carbonyl]phenyl}[4-(2-ethoxyethyl)piperazin-1-yl]methyl}phenylcarbamate;

Compound 9: methyl 3-{(R)-{4-[(diethylamino)carbonyl]phenyl}[4-(3-methoxypropyl)piperazin-1-yl]methyl}phenylcarbamate;
Compound 10: methyl 3-[(R)-{4-[(diethylamino)carbonyl]phenyl}(4-propylpiperazin-1-yl)methyl]phenylcarbamate;
Compound 11: methyl 3-((R)-(4-butylpiperazin-1-yl){4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 12: methyl 3-[(R)-{4-[(diethylamino)carbonyl]phenyl}(4-pentylpiperazin-1-yl)methyl]phenylcarbamate;
Compound 13: methyl 3-((R)-[4-(cyclopropylmethyl)piperazin-1-yl]{4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 14: methyl 3-((R)-[4-(cyclobutylmethyl)piperazin-1-yl]{4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 15: ethyl 3-{(R)-{4-[(diethylamino)carbonyl]phenyl}[4-(2-methoxyethyl)piperazin-1-yl]methyl}phenylcarbamate;
Compound 16: ethyl 3-((R)-(4-butylpiperazin-1-yl){4-[(diethylamino)carbonyl]phenyl}methyl)phenylcarbamate;
Compound 17: ethyl [3-((*R*)-[4-(cyclopropylmethyl)piperazin-1-yl]{4-[(diethylamino)carbonyl]phenyl}methyl)phenyl]carbamate;
Compound 18: ethyl {3-[(*R*)-{4-[(diethylamino)carbonyl]phenyl}(4-propylpiperazin-1-yl)methyl]phenyl}carbamate;
Compound 19: ethyl {3-[(*R*)-{4-[(diethylamino)carbonyl]phenyl}(4-ethylpiperazin-1-yl)methyl]phenyl}carbamate;
Compound 20: ethyl {3-[(*R*)-{4-[(diethylamino)carbonyl]phenyl}(4-methylpiperazin-1-yl)methyl]phenyl}carbamate;
and pharmaceutically acceptable salts thereof.

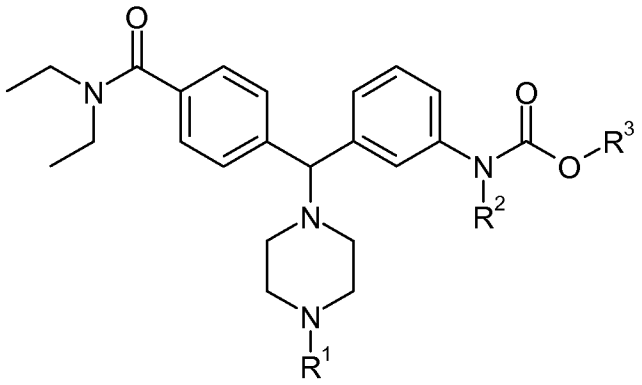
6-7. (cancelled)

8. (currently amended) A pharmaceutical composition comprising a compound according to ~~any one of~~ claim~~s~~ 1~~-5~~ and a pharmaceutically acceptable carrier.

9. (currently amended) A method for the therapy of pain in a warm-blooded animal, comprising the step of administering to said animal in need of such therapy a therapeutically effective amount of a compound according to ~~any one of~~ claim~~s~~ 1~~-5~~.

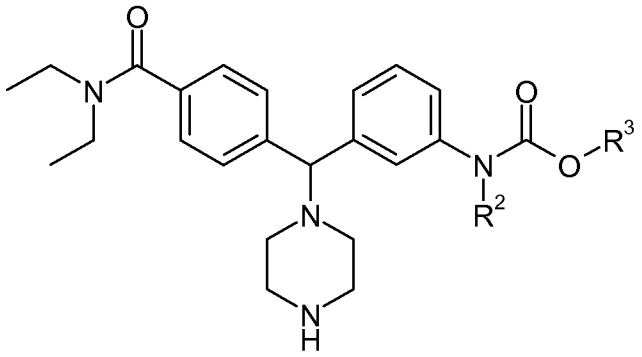
10. (currently amended) A method for the therapy of functional gastrointestinal disorders in a warm-blooded animal, comprising the step of administering to said animal in need of such therapy a therapeutically effective amount of a compound according to ~~any one of~~ claim~~s~~ 1-~~5~~.

11. (original) A process for preparing a compound of formula I, comprising:



I

reacting a compound of formula II with R^1-X:



II

wherein X is a halogen;

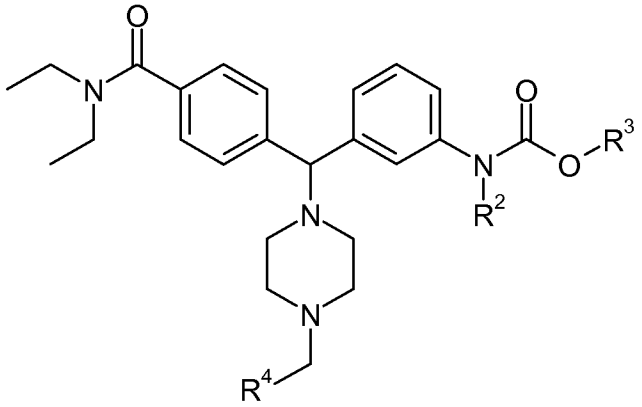
R^1 is selected from C_{1-6}alkyl, C_{2-6}alkenyl, C_{3-6}cycloalkyl, and C_{3-6}cycloalkyl-C_{1-4}alkyl, wherein said C_{1-6}alkyl, C_{2-6}alkenyl, C_{3-6}cycloalkyl, and C_{3-6}cycloalkyl-C_{1-4}alkyl are optionally substituted with one or more groups selected from -R, $-NO_2$, -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, $-C(=O)NR_2$, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl;

R^2 is selected from -H, C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN,

-OH, -C(=O)OR, -C(=O)NR_2, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl; and

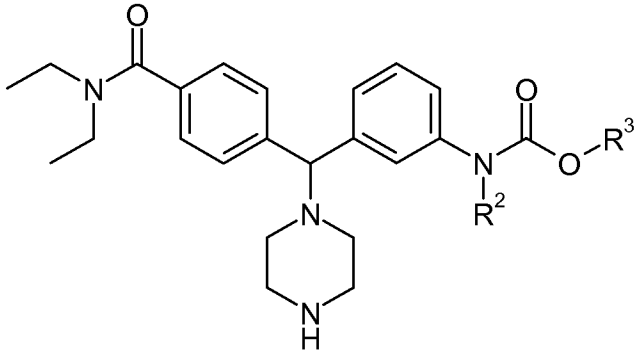
R^3 is selected from C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR_2, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl.

12. (original) A process for preparing a compound of formula III, comprising:



III

reacting a compound of formula II with R^4-CHO:



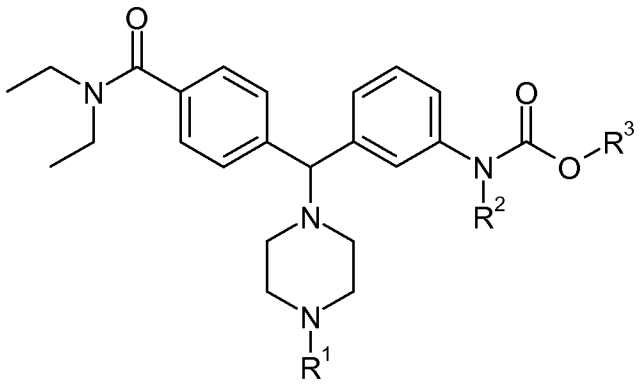
II

wherein R^4 is selected from –H, C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -R, $-NO_2$, -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR_2, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl;

R^2 is selected from -H, C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, $-C(=O)NR_2$, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl; and

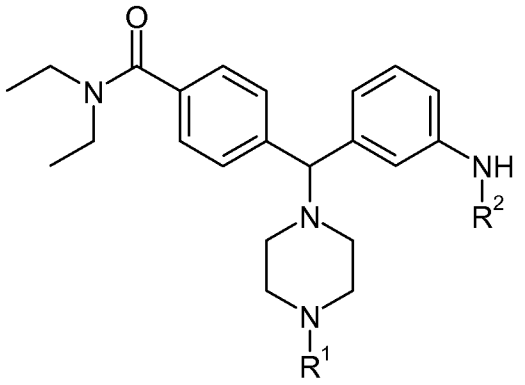
R^3 is selected from C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from C_{1-6}alkyl, halogenated C_{1-6}alkyl, $-CF_3$, C_{1-6}alkoxy, chloro, fluoro and bromo.

13. (original) A process of preparing a compound of formula I, comprising:



I

reacting a compound of formula IV with R^3-O-C(=O)-X:



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IV

wherein X is a halogen;

R^1 is selected from C_{1-6}alkyl, C_{2-6}alkenyl, C_{3-6}cycloalkyl, and C_{3-6}cycloalkyl-C_{1-4}alkyl, wherein said C_{1-6}alkyl, C_{2-6}alkenyl, C_{3-6}cycloalkyl, and C_{3-6}cycloalkyl-C_{1-4}alkyl are optionally substituted with one or more groups selected from -R, $-NO_2$, -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH,

-C(=O)OR, -C(=O)NR_2, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl;

R^2 is selected from -H, C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR_2, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl; and

R^3 is selected from C_{1-6}alkyl and C_{3-6}cycloalkyl, wherein said C_{1-6}alkyl and C_{3-6}cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, $-CF_3$, -C(=O)R, -C(=O)OH, $-NH_2$, -SH, -NHR, $-NR_2$, -SR, $-SO_3H$, $-SO_2R$, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR_2, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C_{1-6}alkyl.

14. (original) A compound selected from:
ethyl 3-[(R)-{4-[(diethylamino)carbonyl]phenyl}(piperazin-1-yl)methyl]phenylcarbamate;
isobutyl 3-[(R)-{4-[(diethylamino)carbonyl]phenyl}(piperazin-1-yl)methyl]phenylcarbamate;
enantiomers thereof; pharmaceutically acceptable salts thereof and mixtures thereof.

15. (new) A method for the therapy of anxiety in a warm-blooded animal, comprising the step of administering to said animal in need of such therapy a therapeutically effective amount of a compound according to claim 1.